

# HVC Series

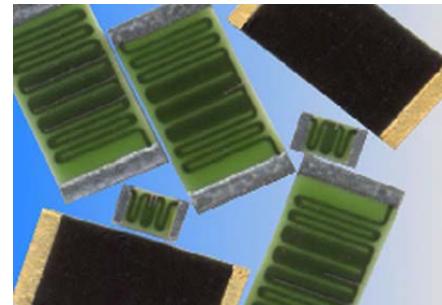
## High Voltage Thick Film Chip Resistor

Stackpole Electronics, Inc.

Resistive Product Solutions

### Features:

- Ohmic values to 50G
- Available with wire bondable terminations
- Tight tolerances to 0.1%
- Utilizes fine film resistor deposition technology
- Superior pulse handling capabilities
- Low TCR to 25 ppm/°C
- Low VCR to 1 ppm/volt
- Very low noise
- Ultra high stability
- Custom sizes available
- Higher (up to 1Tohm) or lower resistance values may be available (contact factory)
- Standard HVC parts are unmarked
- RoHS compliant and halogen-free



### Electrical Specifications

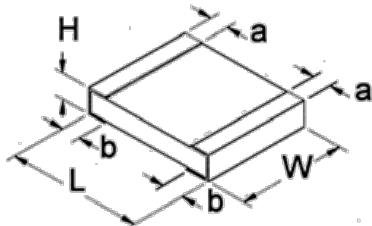
Type / Code	Power Rating (Watts) @ 70°C	Maximum Working Voltage <sup>(1)</sup>	Resistance Temperature Coefficient	Ohmic Range (Ω) and Tolerance									
				0.1%	0.25%	0.5%	1%	2%	5%	10%	20%		
HVC0603	0.06W	400V	± 50 ppm/°C	-	10K - 10M	10K - 100M	10K - 500M		10K - 1G				
			± 100 ppm/°C			10K - 500M	10K - 1G		10K - 10G	10K - 50G			
			± 200 ppm/°C			10K - 10M	10K - 500M		10K - 1G	10K - 10G			
			± 50 ppm/°C	-	10K - 10M	10K - 1G	10K - 500M		10K - 10G	10K - 50G			
HVC0805	0.2W	600V	± 100 ppm/°C			10K - 10M	10K - 500M		10K - 1G	10K - 10G			
			± 200 ppm/°C			10K - 1G	10K - 500M		10K - 10G	10K - 50G			
			± 25 ppm/°C	1M - 100M	1M - 100M						1M - 100M		
			± 50 ppm/°C		100K - 100M	100K - 100M	100K - 500M						
HVC1206	0.33	1500V	± 100 ppm/°C		10K - 100M	10K - 100M	10K - 500M	10K - 1G	10K - 1G				
			± 200 ppm/°C		10K - 100M	10K - 100M	10K - 1G	10K - 10G	10K - 50G				
			± 25 ppm/°C	1M - 100M	1M - 100M						1M - 100M		
			± 50 ppm/°C		100K - 100M	100K - 100M	100K - 500M						
HVC2010	1W	2000V	± 100 ppm/°C		10K - 100M	10K - 100M	10K - 500M	10K - 1G	10K - 1G				
			± 200 ppm/°C		10K - 100M	10K - 100M	10K - 1G	10K - 10G	10K - 50G				
			± 25 ppm/°C	1M - 100M	1M - 500M						1M - 500M		
			± 50 ppm/°C		100K - 100M	100K - 500M	100K - 1G						
HVC2512	2W	3000V	± 100 ppm/°C		10K - 100M	10K - 500M	10K - 1G	10K - 10G		100K - 10G	100K - 50G		
			± 200 ppm/°C		10K - 100M	10K - 500M	10K - 1G	10K - 10G		100K - 10G	100K - 50G		
			± 25 ppm/°C	1M - 100M	1M - 500M						1M - 500M		
			± 50 ppm/°C		100K - 100M	100K - 500M	100K - 1G						
HVC3512	3W	3500V	± 100 ppm/°C		10K - 100M	10K - 500M	10K - 1G	10K - 10G		100K - 10G	100K - 50G		
			± 200 ppm/°C		10K - 100M	10K - 500M	10K - 1G	10K - 10G		100K - 10G	100K - 50G		

Proper terminal isolation is required to achieve the voltage ratings for each given size.

(1) The continuous maximum voltage applied cannot exceed the maximum power rating and is ohmic value dependent.

Note: Other case sizes and tolerances are available.

### Mechanical Specifications



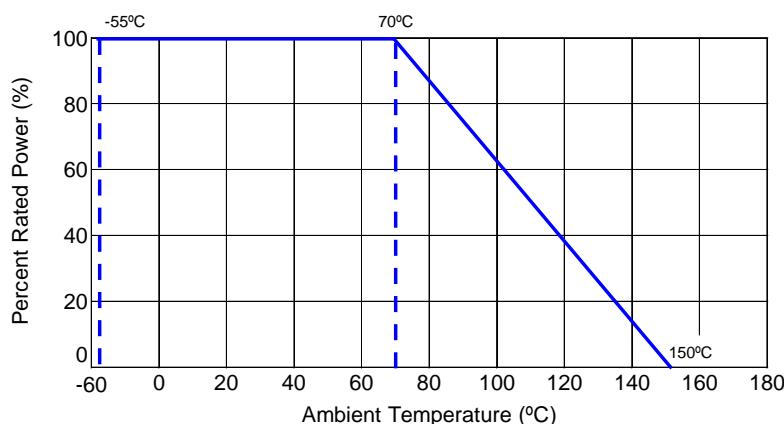
Type / Code	L Body Length	W Body Width	H Body Height (Max.)	a Top Termination	b Bottom Termination	Unit
HVC0603	0.063 ± 0.01 1.60 ± 0.25	0.031 ± 0.005 0.79 ± 0.13	0.020 0.51	0.010 ± 0.005 0.25 ± 0.13	0.012 ± 0.008 0.30 ± 0.20	inches mm
HVC0805	0.079 ± 0.01 2.01 ± 0.25	0.050 ± 0.005 1.27 ± 0.13	0.025 0.64	0.010 ± 0.005 0.25 ± 0.13	0.013 ± 0.008 0.33 ± 0.20	inches mm
HVC1206	0.126 ± 0.01 3.20 ± 0.25	0.063 ± 0.005 1.60 ± 0.13	0.030 0.76	0.010 ± 0.005 0.25 ± 0.13	0.020 ± 0.010 0.51 ± 0.25	inches mm
HVC2010	0.200 ± 0.01 5.08 ± 0.25	0.100 ± 0.005 2.54 ± 0.13	0.030 0.76	0.018 ± 0.010 0.46 ± 0.25	0.020 ± 0.010 0.51 ± 0.25	inches mm
HVC2512	0.250 ± 0.01 6.35 ± 0.25	0.125 ± 0.005 3.18 ± 0.13	0.030 0.76	0.020 ± 0.010 0.51 ± 0.25	0.024 ± 0.010 0.61 ± 0.25	inches mm
HVC3512	0.350 ± 0.01 8.89 ± 0.25	0.125 ± 0.005 3.18 ± 0.13	0.030 0.76	0.020 ± 0.010 0.51 ± 0.25	0.024 ± 0.010 0.61 ± 0.25	inches mm

### Performance Characteristics

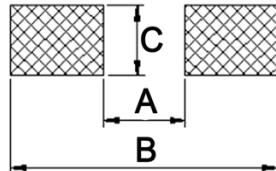
Test	Typical Performance
Short Time Overload	0.1%
Load Life	0.1%
Temperature Cycle	0.1%
Moisture Resistance	0.1%
Shock	0.05%
Vibration	0.05%
Dielectric Withstanding Voltage	0.05%
Resistance to Soldering Heat	0.05%

Parameter	Typical
Operating Temperature	-55°C to 150°C
TCR	measured from 25°C to 75°C
Pulse Capability	10X rated wattage Consult factory for custom pulse applications
Resistance Value	Measured at 100V Consult factory for custom test voltages

### Power Derating Curve:



### Recommended Pad Layout



Type / Code	A	B	C	Unit
HVC0603	0.031 0.80	0.083 2.10	0.035 0.90	inches mm
HVC0805	0.047 1.20	0.118 3.00	0.051 1.30	inches mm
HVC1206	0.087 2.20	0.165 4.20	0.063 1.60	inches mm
HVC2010	0.138 3.50	0.240 6.10	0.110 2.80	inches mm
HVC2512	0.150 3.80	0.315 8.00	0.138 3.50	inches mm

### RoHS Compliance

Stackpole Electronics has joined the worldwide effort to reduce the amount of lead in electronic components and to meet the various regulatory requirements now prevalent, such as the European Union's directive regarding "Restrictions on Hazardous Substances" (RoHS 2). As part of this ongoing program, we periodically update this document with the status regarding the availability of our compliant components. All our standard part numbers are compliant to EU Directive 2011/65/EU of the European Parliament.

RoHS Compliance Status						
Standard Product Series	Description	Package / Termination Type	Standard Series RoHS Compliant	Lead-Free Termination Composition	Lead-Free Mfg. Effective Date (Std Product Series)	Lead-Free Effective Date Code (YY/WW)
HVC	High Voltage Thick Film Surface Mount Chip Resistor	SMD	YES(1)	100% Matte Sn ("T")	Always	Always

Note (1): RoHS Compliant by means of exemption 7c-I.

### “Conflict Metals” Commitment

We at Stackpole Electronics, Inc. are joined with our industry in opposing the use of metals mined in the “conflict region” of the Eastern Democratic Republic of the Congo (DRC) in our products. Recognizing that the supply chain for metals used in the electronics industry is very complex, we work closely with our own suppliers to verify to the extent possible that the materials and products we supply do not contain metals sourced from this conflict region. As such, we are in compliance with the requirements of Dodd-Frank Act regarding Conflict Minerals.

### Compliance to “REACH”

We certify that all passive components supplied by Stackpole Electronics, Inc. are SVHC (Substances of Very High Concern) free and compliant with the requirements of EU Directive 1907/2006/EC, “The Registration, Evaluation, Authorization and Restriction of Chemicals”, otherwise referred to as REACH. Contact us for complete list of REACH Substance Candidate List.

### Environmental Policy

It is the policy of Stackpole Electronics, Inc. (SEI) to protect the environment in all localities in which we operate. We continually strive to improve our effect on the environment. We observe all applicable laws and regulations regarding the protection of our environment and all requests related to the environment to which we have agreed. We are committed to the prevention of all forms of pollution.

### How to Order

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
H	V	C	B	2	5	1	2	F	K	C	1	0	M	0
<hr/>														
Product Series	Size	Power	Tolerance	Packaging					TCR	Resistance Value				
HVCB	0603	0.06W	Code B 0.1%	Code		Description		Size	Code E 25	Four characters with the multiplier used as the decimal holder.				
	0805	0.2W	C 0.25%	Code C 50		7" Reel - Paper Tape		0603, 0805		10 Kohm = 10K0				
HVCG	1206	0.33W	D 0.5%	Code D 100		1206		5,000		1 Mohm = 1M00				
HVCS	2010	1W	F 1%	Code L 200		2010		4,000		10 Gohm = 10G0				
	2512	2W	G 2%	Code M 300		2512		2,000						
HVCZ	3512	3W	J 5%											
			K 10%			7" Reel - Plastic Tape		0603, 0805, 1206						
			M 20%			2010, 2512, 3512		1,000						
						7" Reel - Paper Tape		0603, 0805, 1206						
						7" Reel - Plastic Tape		2010, 2512, 3512						
						7" Reel - Paper Tape		0603, 0805, 1206						
						7" Reel - Plastic Tape		2010, 2512, 3512						
						Bulk		All Sizes						